

### **ABSTRACT OF THE DISCLOSURE**

A non-invasive blood glucose monitoring system wherein sensors in contact with separate locations on the ear and calibrated to be accurate to at least  $\pm .035$  degrees Centigrade take the ear temperatures at these locations up to four times per minute continuously to calculate the temperature differential, and using this temperature differential in conjunction with a value determined by taking the square root of the product of the fasting blood glucose and HbA1c that becomes the base line glucose reference level, it can be determined that if the temperature differential decreases, then the blood glucose has increased 1 mg/dl per approximately .024 C, while if the temperature differential increases, the blood glucose has decreased 1 mg/dl per approximately .024 C.

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